2004 Coastal Nonpoint Source Pollution Grant Program Funded Projects

Proponent: **Town of Rockport Department of Public Works**
Project Title: Lower Mill Brook Nonpoint Source Pollution Assessment
Watershed: North Shore
Project Type: Assessment and Design
Award: $22,845

A large portion of the town of Rockport's economy is tourist-based. Bacterial contamination from nonpoint sources has caused periodic closures of the town's most prominent beach, Front Beach, and a decrease in confidence to beach-goers regarding public health. The town will to assess nonpoint pollution, particularly stormwater sedimentation and bacterial contamination, to the lower portion of Mill Brook to Front Beach. This assessment will be based on a preliminary study that included dry weather samples to determine the extent of contamination. The goal of this project is to characterize and evaluate the nature and sources of contamination, and to develop best management practices. Prior to proposal submission, the CZM Coastal Nonpoint Source Program Grants Coordinator and staff from the Natural Resource Conservation Service met with the project proponents to discuss this project.

Proponent: **Mass Audubon, North Shore Conservation Advocacy**
Project Title: Implementing Open Space Residential Design to Reduce Nonpoint Source Pollution in the Lower Merrimack River Watershed
Watershed: North Shore
Project Type: Capacity Building
Award: $9,015

The lower region of the Merrimack River is cited as one of the areas of Massachusetts with the highest rate of development. Rapid development will result in an increase of nonpoint source (NPS) pollution from new residential, commercial, and industrial development. Massachusetts Audubon proposes to provide targeted outreach and technical assistance regarding a proven, transferable NPS control tool, Open Space Residential Development (OSRD), to communities in the Lower Merrimack Valley. The goal of this project is to educate communities regarding this smart growth tool. Technical assistance and outreach will focus on the benefits of the use of OSRD and its adoption. Education regarding how the use of this type of conservation subdivision permitting will help communities in reducing NPS pollution that typically occurs with traditional development practices. This project is in line with CZM's efforts in the North Shore Region regarding the use conservation subdivision and other strategies to reduce impacts of development on coastal resources.

Proponent: **Town of Marion**
Project Title: Tabor Academy Stormwater Assessment Project
Watershed: South Coastal
Project Type: Assessment
Award: $6,800

Studies have shown low to moderate habitat quality in Sippican Harbor in Marion (designated as an Outstanding Resource Water), particularly in eelgrass beds, due to nutrient loadings. Large properties directly adjacent to the harbor are suspected to be the predominant source of nutrient inputs. Using the Buzzards Bay Project's *Stormwater Discharge Atlas*, the town of Marion has identified five areas of concern along the western shore of Sippican Harbor. This project includes field verification of stormwater discharge flows and land use characteristics of the area of concern. Water quality monitoring will occur in order to determine the presence of fertilizers in stormwater discharges, and potential bacterial contamination to adjacent shellfish beds. The goal of the project is to further understand the sources of contamination to the harbor and to determine best management practices for remediation and control.

Proponent: **Martha's Vineyard Commission**
Project Title: Martha's Vineyard Coastal Pond Nitrogen Loading Source Evaluation
Watershed: Cape Cod
Project Type: Assessment
Award: $10,869

Data collected has shown that the most prominent contaminant entering Martha's Vineyard's coastal ponds (Tashmoo, Lagoon, and Sengekontacket Ponds) is nitrogen. Homes located around these ponds are suspected to be the predominant source of nutrient inputs. The goal of this project is to identify all parcels of land within the three watershed areas and to use this information as a basis to characterize the present-day and projected nitrogen loading. Characterization of land use will include identifying lot size, development trends, and projected development for each vineyard town. This information will be used to run a residential nitrogen-loading model. This data will then be compared with the Massachusetts Estuaries Project/School for Marine Science and Technology at UMass Dartmouth watershed nitrogen-loading model for quality control and quality assurance purposes. The information collected will help complete the Massachusetts Estuaries Project in this area.

Proponent: **Town of Sandwich**
Project Title: Phase 2-Subbasin 1, Site 1.2, and Site 1.3 Design of BMPs to Mitigate Pollution Caused by Runoff to Mill Creek in Sandwich Village
Watershed: Cape Cod
Project Type: Design
Award: $16,778

Sandwich Harbor has been closed to shellfishing by the Massachusetts Division of Marine Fisheries because of exceedences in fecal coliform levels, which are above the 14 counts per 100ml State standard for shellfishing. Stormwater pollution entering the creek has been identified as a major contributor to the high bacterial counts in Mill Creek, flowing directly to Sandwich Harbor. The town of Sandwich will design structural best management practices to remediate nonpoint source pollution in stormwater entering the creek. The project, based on a prior CZM-funded stormwater drainage system assessment, will include a topographic field survey, delineation of natural resources, preparation of BMP design plans, and construction estimations. The portion of Mill Creek where the remediation will occur is highly visible to the general public, as the area is a popular tourist destination.

Proponent: **Town of Barnstable**
Project Title: Stormwater Assessment and Mitigation Project (Ocean Street and Bay Shore Road Area)
Watershed: Cape Cod
Project Type: Assessment and Design
Award: $37,150

Stormwater discharges have had a significant impact on the water quality of Hyannis Inner Harbor. In the town of Barnstable, the most significant contaminant transported by stormwater is fecal coliform, and the Division of Marine Fisheries has designated the Hyannis Inner Harbor shellfish beds as a priority area for remediation. In addition to fecal coliform contamination, stormwater discharges have caused a build-up of sediment that must be dredged from the harbor periodically. Based on a CZM-funded stormwater drainage system assessment, the town of Barnstable will design best management practices to remediate nonpoint source pollution in stormwater entering the inner harbor. While implementation of stormwater BMPs has occurred at the northern area of the inner harbor, this project will bolster these efforts by providing design of BMPs that will provide complementary NPS control. The project will include onsite water quality sampling, a topographic field survey, delineation of natural resources, preparation of BMP design plans, and construction estimations.

Proponent: **Massachusetts Department of Agricultural Resources**
Project Title: Promoting Agricultural Commissions to Assist Communities in Addressing Agricultural Nonpoint Source Pollution and Manage Growth.
Watershed: Boston Harbor
Project Type: Capacity Building
Award: $32,600

Unchecked farming practices can significantly contribute to NPS pollution, particularly bacterial input. The goal of this capacity-building project is to assist municipalities in coastal watersheds with NPS pollution control that generates from agricultural resources. Although there are two state programs available to farmers to assist them with technical and financial solutions to potential NPS pollution problems, not all farmers utilize these resources. In addition, farmers are generally apprehensive about working with local officials (conservation commissioners, Department of Public Works officials) regarding pollution control – officials who may not have an agricultural background or understand farming issues. Therefore, the Massachusetts Department of Agricultural Resources will hire a program coordinator to promote the development of agricultural commissions in coastal farming communities. An agricultural commission is a standing town committee whose members would primarily be engaged in farming. This commission will work cooperatively with local conservation commissions to ensure that NPS pollution information and resources are exchanged. Agricultural commissioners will work directly with farmers to evaluate farm contributions to nonpoint source pollution, and direct farmers to technical and financial assistance for remediating the problem.

Proponent: **Towns of Duxbury, Marshfield, Plymouth**
Project Title: Development and Testing of a Model Stormwater Management Bylaw-Integrating the Principles of Groundwater recharge, Runoff Reduction, and Resource Conservation for Local Communities in Massachusetts
Watershed: South Shore
Project Type: Capacity Building
Award: $34,920

The goal of this project is to develop a tool that will assist communities in implementing effective stormwater management. The project calls for the development of a model stormwater bylaw that incorporates the concepts and principles of low impact design/development and conservation planning. Such a bylaw would allow towns to have greater control of pollution impacts from new development, an increasing issue in these south shore communities, and guide their efforts in meeting state water quality standards. Training workshops have been proposed in order to introduce the bylaw provisions to local officials. CZM, Buzzards Bay Project, and Mass Bays technical and regional staff spend a great deal of their time providing technical assistance regarding stormwater management to local communities. Their commitment to provide information, resources, and staff time to this project is in place, which would provide Executive Office of Environmental Affairs agencies with a unique opportunity to assist with the development of a stormwater management tool that can be easily transferred to other regions.

Proponent: **City of Salem Department of Public Services**
Project Title: Juniper Beach Study
Watershed: North Shore
Project Type: Assessment
Award: $23,100

The Salem Board of Health closed Juniper Beach ten (10) times from June 1995 to August 2003 because the levels of enterococci bacteria exceeded the state standard of 104 colonies per 100ml sample. This issue has been troublesome to the city. The board has spent the past few years trying to determine the sources of bacteria to the beach and to take appropriate corrective actions. Although the city suspected to find direct or cross connections of the sanitary sewer system to the stormdrain system, field investigations did not identify these problems, making

the issue more complicated. During the course of this project, the city will evaluate the possibility of nonpoint source contamination to groundwater from unknown and/or failing septic systems in the area (although the city is sewered, there are homes in this area that were never converted and the city has been trying to track them). In addition, they will also evaluate potential contamination from pet waste in runoff to Juniper Beach.

Proponent: **City of Salem Department of Public Services**
Project Title: Willows Park Land Survey
Watershed: North Shore
Project Type: Assessment
Award: $16,050

Willow Park is one of the city of Salem's most popular venues for summer events and recreation. However, each year beaches surrounding Willows Park (Willows Pier, Memorial Drive, and Steps Beach) are closed due to bacterial contamination. Beach closings appear to be related to moderate levels of rainfall, indicating that bacterial pollution from stormwater is a major contributor to the beach closings. The following potential nonpoint sources of bacteria in storm water will be investigated in the Willows Park Land Survey; pets and wildlife, septic systems, runoff from Willows Park, and fishing practices. The city will conduct a land survey to investigate the potential sources noted above and study potential human behaviors (feeding water foul, improper disposal of trash, leaving pet waste), which may be intensifying the problem, in order to determine best management practices.

Proponent: **Salem Sound Coastwatch**
Project Title: Clean Beaches and Streams Program
Watershed: North Shore
Project Type: Assessment
Award: $16,250

The Massachusetts Integrated List of Waters (formerly the §303d list of impaired waters), contains most of the major waterbodies found in the Salem Sound Watershed, including Manchester Harbor, Salem Harbor, Marblehead Harbor, Danvers River, Crane River, Crane Brook, Forest River, North River, and Waters River. The majority of these waterways continue to be severely impacted by NPS pollution, particularly bacterial contamination. Salem Sound Coastwatch has proposed a project that would further the efforts of their Clean Beaches and Streams Program. This program provides water quality monitoring services to a number of North Shore communities. In addition to this effort, Salem Sound proposes to communicate findings of the monitoring program to CZM, municipalities, and the general public, and identify, develop, and implement appropriate NPS management measures.